

Listing of Claims

A listing of the entire set of pending claims is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously presented) A method for driving an organic LED display device having a first and a second electrode sandwiching an organic layer defining a plurality of light emitting elements, comprising:

applying a voltage within a specified voltage range that is above a fusing voltage and below a leakage threshold voltage to a light emitting element, within which voltage range the risk of short circuits between the electrodes is reduced, and

controlling a duty cycle of the light emitting element, so that a desired light intensity is emitted from the light emitting element.

2. (Previously presented) The method of claim 1, wherein the duty cycle of the light emitting element is decreased in order to emit a desired light intensity without requiring an applied voltage below a specified lower limit.

3. (Previously presented) The method of claim 1, wherein a default duty cycle of the light emitting element is less than 100%, and wherein the duty cycle is increased in order to emit a desired light intensity without requiring an applied voltage above a specified upper limit.

4. (Previously presented) The method of claims 2 or 3, including: determining an expected voltage change over time required to maintain a constant drive current in the light emitting element, and adjusting the duty cycle of the light emitting element accordingly.

5. (Previously presented) The method of claims 2 or 3, including: monitoring an average pixel voltage in the display, and adjusting the duty cycle of each light emitting element based on this average voltage.

6. (Previously presented) The method of claims 2 or 3, including: monitoring a voltage of a light emitting element, and adjusting the duty cycle of the light emitting element based on this voltage.

7. (Previously presented) The method of claim 1, wherein the duty cycle is controlled over each frame.

8. (Previously presented) The method of claim 1, wherein the duty cycle is controlled over a plurality of frames.

9. (Previously presented) The method of claim 1, wherein the display device is of active matrix type.

10. (Previously presented) The method of claim 9, wherein the duty cycle is controlled for each light emitting element individually.

11. (Previously presented) The method of claim 9, wherein the duty cycle is commonly controlled for a plurality of light emitting elements.

12. (Previously presented) The method of claim 8, wherein the display device is of passive matrix type.

13 (Canceled)

14. (Previously presented) An organic display device having a first and a second electrode sandwiching an organic layer defining a plurality of light emitting elements, comprising:

a driver that is configured to apply a voltage to a light emitting element, the voltage lying in a specified voltage range that is above a fusing voltage and below a leakage threshold voltage, within which voltage range the risk of short circuits between the electrodes is reduced, and

a controller that is configured to control the duty cycle of the light emitting element, so that a desired light intensity is emitted from the light emitting element.

15. (Previously presented) The device of claim 14, wherein the controller is arranged to decrease the duty cycle in order to emit a desired light intensity without requiring an applied voltage below a specified lower limit.

16. (Previously presented) The device of claim 14, wherein the controller is arranged to maintain a default duty cycle of the light emitting element less than 100%, and to increase the duty cycle in order to emit a desired light intensity without requiring an applied voltage above a specified upper limit.

17. (Previously presented) The device of one of claims 14 – 16, wherein the controller includes a transistor connected between the light emitting element and the driver, and a duty cycle controller, connected to a gate of the transistor.

18. (Previously presented) The device of one of claims 14 – 16, wherein the controller includes a duty cycle controller connected to the driver.

19. (Previously presented) The device of one of claims 14 – 16, wherein the controller includes a duty cycle controller connected to an other side of the light emitting element in relation to the driver.

20. (Previously presented) The device of any one of claims 14 – 16, wherein the driver includes a power line and a drive transistor connected between the power line and the light emitting element.

21. (Previously presented) The device of claim 14, wherein the controller is arranged to jointly control the duty cycle for a plurality of light emitting elements.

22. (Previously presented) A display device comprising:

a plurality of light emitting elements, and

a controller that is configured to control a voltage and duty cycle of each light emitting element,

wherein

the light emitting element exhibits a higher likelihood of fusing short circuits below a first voltage and higher likelihood of leakage current above a second voltage, and

the controller is configured to control the duty cycle of each light emitting element to provide a desired light intensity which maintaining the voltage applied to each light emitting element to be above the first voltage and below the second voltage.

23. (Previously presented) The display device of claim 22, including:

a drive transistor associated with each light emitting element that is configured to provide the voltage to the light emitting element, and

a duty cycle transistor associated with each light emitting element that is in series with the drive transistor and the light emitting element.

24. (Previously presented) The display device of claim 22 including:

a drive transistor associated with each light emitting element that is configured to provide the voltage to the light emitting element from a supply line, and

one or more duty cycle switches that are configured to limit the supply line based on the duty cycle.

25. (Previously presented) The display device of claim 22 including:

a drive transistor associated with each light emitting element that is configured to provide the voltage to the light emitting element via a series coupling between first and second supply lines, and

one or more duty cycle switches that are configured to control at least one of the first and second supply lines based on the duty cycle.

26. (Previously presented) The display device of claim 22, wherein the first voltage is above 4 volts, and the second voltage is below 11 volts.

27. (Previously presented) The display device of claim 22, wherein the controller is configured to control the duty cycle based on an average pixel voltage value.

28. (Previously presented) The display device of claim 26, wherein the average pixel voltage value is determined for each image frame.

29. (Previously presented) The display device of claim 27, wherein the average pixel voltage value is determined over a plurality of image frames.